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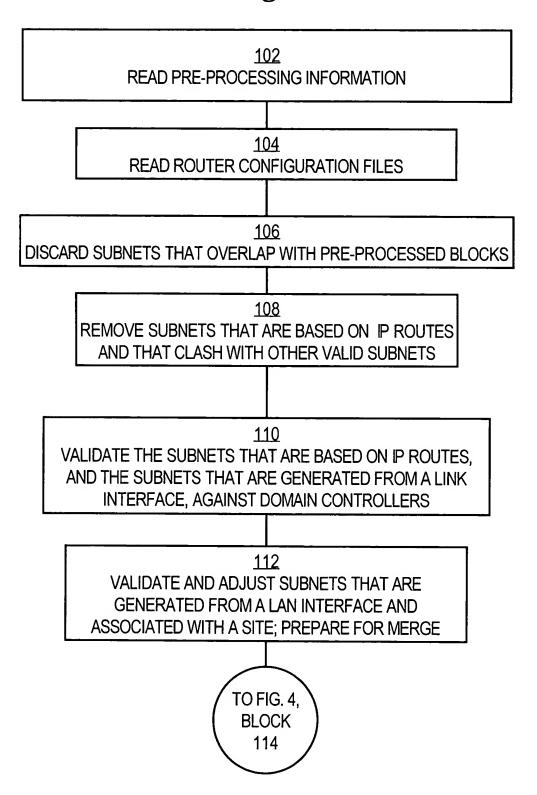Attorney: John D. Henkhaus; Inventors: Alan B. Conley et al.
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Fig. 1

102
READ PRE-PROCESSING INFORMATION

104
READ ROUTER CONFIGURATION FILES

106
DISCARD SUBNETS THAT OVERLAP WITH PRE-PROCESSED BLOCKS

108
REMOVE SUBNETS THAT ARE BASED ON IP ROUTES
AND THAT CLASH WITH OTHER VALID SUBNETS

110
VALIDATE THE SUBNETS THAT ARE BASED ON IP ROUTES,
AND THE SUBNETS THAT ARE GENERATED FROM A LINK
INTERFACE, AGAINST DOMAIN CONTROLLERS

112
VALIDATE AND ADJUST SUBNETS THAT ARE
GENERATED FROM A LAN INTERFACE AND
ASSOCIATED WITH A SITE; PREPARE FOR MERGE

TO FIG. 4,
BLOCK
114

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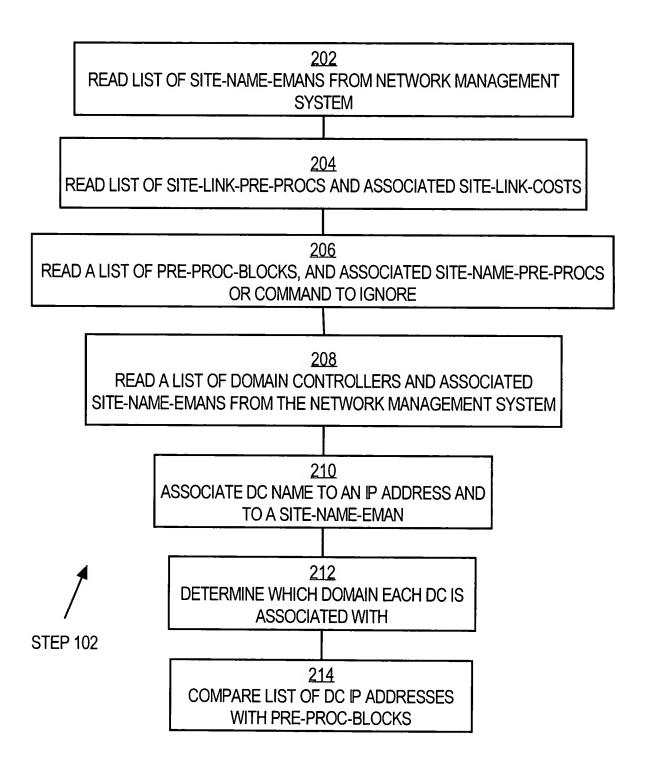Docket No. 50325-0821; Page 2 of 9

Fig. 2

202
READ LIST OF SITE-NAME-EMANS FROM NETWORK MANAGEMENT SYSTEM

204
READ LIST OF SITE-LINK-PRE-PROCS AND ASSOCIATED SITE-LINK-COSTS

206
READ A LIST OF PRE-PROC-BLOCKS, AND ASSOCIATED SITE-NAME-PRE-PROCS OR COMMAND TO IGNORE

208
READ A LIST OF DOMAIN CONTROLLERS AND ASSOCIATED SITE-NAME-EMANS FROM THE NETWORK MANAGEMENT SYSTEM

210
ASSOCIATE DC NAME TO AN IP ADDRESS AND TO A SITE-NAME-EMAN

212
DETERMINE WHICH DOMAIN EACH DC IS ASSOCIATED WITH

214
COMPARE LIST OF DC IP ADDRESSES WITH PRE-PROC-BLOCKS

STEP 102

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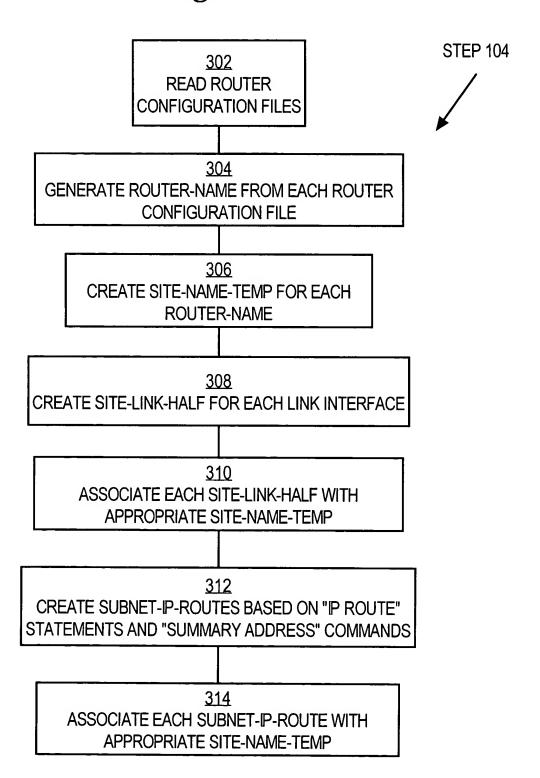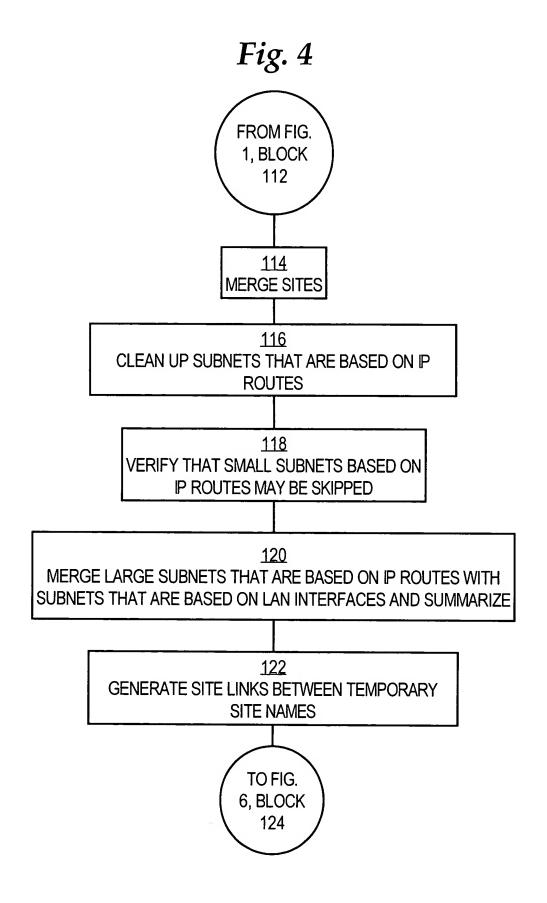Title: Automatically Generating Replication Topology Information for Use by a Directory...
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Fig. 3

STEP 104

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┌─────────────────────────────┐
│            302              │
│        READ ROUTER          │
│     CONFIGURATION FILES      │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│            304              │
│  GENERATE ROUTER-NAME FROM   │
│   EACH ROUTER CONFIGURATION  │
│            FILE              │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│            306              │
│  CREATE SITE-NAME-TEMP FOR   │
│     EACH ROUTER-NAME         │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│            308              │
│ CREATE SITE-LINK-HALF FOR    │
│    EACH LINK INTERFACE       │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│            310              │
│ ASSOCIATE EACH SITE-LINK-    │
│  HALF WITH APPROPRIATE       │
│     SITE-NAME-TEMP           │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│            312              │
│ CREATE SUBNET-IP-ROUTES      │
│ BASED ON "IP ROUTE"          │
│ STATEMENTS AND "SUMMARY      │
│ ADDRESS" COMMANDS            │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│            314              │
│ ASSOCIATE EACH SUBNET-IP-    │
│  ROUTE WITH APPROPRIATE      │
│     SITE-NAME-TEMP           │
└─────────────────────────────┘
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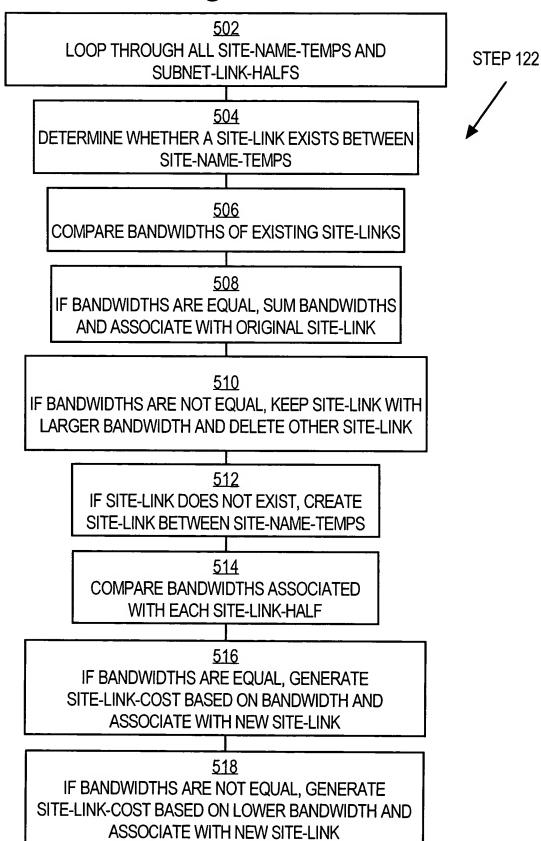Title: Automatically Generating Replication Topology Information for Use by a Directory...
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Fig. 4

FROM FIG.
1, BLOCK
112

114
MERGE SITES

116
CLEAN UP SUBNETS THAT ARE BASED ON IP
ROUTES

118
VERIFY THAT SMALL SUBNETS BASED ON
IP ROUTES MAY BE SKIPPED

120
MERGE LARGE SUBNETS THAT ARE BASED ON IP ROUTES WITH
SUBNETS THAT ARE BASED ON LAN INTERFACES AND SUMMARIZE

122
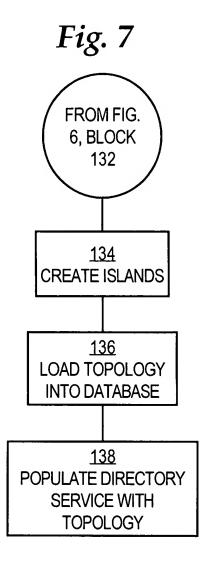GENERATE SITE LINKS BETWEEN TEMPORARY
SITE NAMES

TO FIG.
6, BLOCK
124

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Fig. 5

502
LOOP THROUGH ALL SITE-NAME-TEMPS AND
SUBNET-LINK-HALFS

STEP 122

504
DETERMINE WHETHER A SITE-LINK EXISTS BETWEEN
SITE-NAME-TEMPS

506
COMPARE BANDWIDTHS OF EXISTING SITE-LINKS

508
IF BANDWIDTHS ARE EQUAL, SUM BANDWIDTHS
AND ASSOCIATE WITH ORIGINAL SITE-LINK

510
IF BANDWIDTHS ARE NOT EQUAL, KEEP SITE-LINK WITH
LARGER BANDWIDTH AND DELETE OTHER SITE-LINK

512
IF SITE-LINK DOES NOT EXIST, CREATE
SITE-LINK BETWEEN SITE-NAME-TEMPS

514
COMPARE BANDWIDTHS ASSOCIATED
WITH EACH SITE-LINK-HALF

516
IF BANDWIDTHS ARE EQUAL, GENERATE
SITE-LINK-COST BASED ON BANDWIDTH AND
ASSOCIATE WITH NEW SITE-LINK

518
IF BANDWIDTHS ARE NOT EQUAL, GENERATE
SITE-LINK-COST BASED ON LOWER BANDWIDTH AND
ASSOCIATE WITH NEW SITE-LINK

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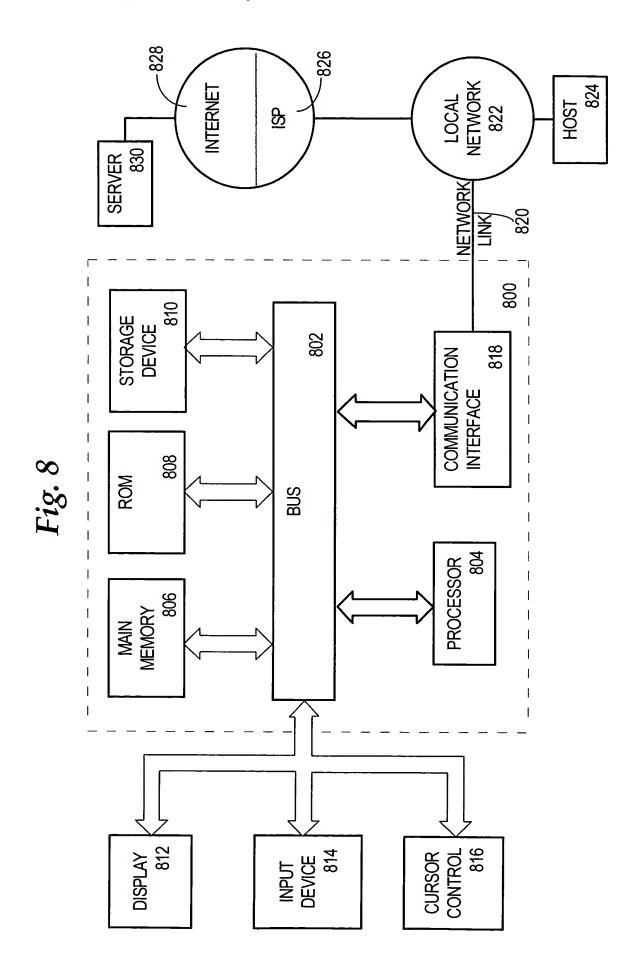Attorney: John D. Henkhaus; Inventors: Alan B. Conley et al.
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Fig. 6

FROM FIG. 4, BLOCK 122

124
REPLACE TEMPORARY SITE NAMES WITH SITE NAMES TAKEN FROM MASTER LIST

126
DETERMINE LARGEST SITE

128
MERGE SITES HAVING PRE-PROCESSED NAMES WITH OFFICIALLY NAMED SITES

130
INTEGRATE PRE-PROCESSED SITE LINKS WITH OTHER SITE LINKS

132
CONSOLIDATE TOPOLOGY INFORMATION

TO FIG. 7, BLOCK 134

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Fig. 7

FROM FIG.
6, BLOCK
132

134
CREATE ISLANDS

136
LOAD TOPOLOGY
INTO DATABASE

138
POPULATE DIRECTORY
SERVICE WITH
TOPOLOGY

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Fig. 8

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Fig. 9